

REMARKS

Status of the Claims

Claims 1-23 were originally pending in the application. Claims 19-23 were withdrawn from consideration and have now been canceled. Claims 1-18 have been rejected. Claims 1 and 2 have been canceled. Claim 12 has been amended. Claims 3-18 are now pending. Reexamination and reconsideration of the claims are respectfully requested.

The Rejection Under 35 U.S.C. §112 Second Paragraph Should be Withdrawn

Claim 17 was rejected by the Examiner under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly pointing out and distinctly claiming the subject matter which the Applicant regards as the invention. In particular, the Examiner argues that the term “DNA chelating agent” is unclear. The Applicant disagrees. As the Examiner points out, the term “DNA chelating agent” refers to agents which bind metal ions such as EDTA. Since the term “DNA chelating agent” is well known to one skilled in the art, including the Examiner, the Applicant does not need to define the term, either in the claims or the specification. Applicant respectfully requests that the rejection under 35 U.S.C. §112 second paragraph be withdrawn.

The Rejections Under 35 U.S.C. §102(b) Should be Withdrawn

Claims 1 and 2 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,251,639 to Kurn. Claims 1 and 2 have now been canceled, thus rendering the Examiner’s rejection moot. Applicant respectfully requests that the rejection to claims 1 and 2 under 35 U.S.C. 102(b) be withdrawn.

The Rejections Under 35 U.S.C. §103(a) Should be Withdrawn

Claims 3-18 were rejected by the Examiner under 35 U.S.C. 103 as being unpatentable over Richards (USP 5,645,987) in view of U.S. Patent No. 5,230,350 to Kurn and in further view of U.S. Patent No. 5,916,777 to Kacian. The Applicant traverses this rejection.

With regard to the rejection as it applies to claims 3 and 10, the examiner states that:

“It would have been *prima facie* obvious to one of skill in the art at the time that the time the invention of the instant application was made to incorporate the chimeric primers and RNase H digestion taught by Kacian and the ‘blocker’ oligonucleotides taught by Kurn in the ‘primer extension cascade’ taught by Richards.” The Applicant disagrees.

The Applicant submits that Richards neither anticipates the claims nor are they made obvious by either Kurn or Kacian. Richards does not teach or suggest the claims of the present invention. The Examiner states that Richards teaches a method comprising a primer extension cascade in which the cleaved and released primer extension product from a first primer extension reaction serves as a primer in a subsequent primer extension reactions (as depicted in Figure 6). The Applicant disagrees.

As described in Claim 3 and demonstrated in Figure 1 of the Applicant’s application, the method of the present invention is a multi step process which results in the amplification of a target sequence. Unlike the process described in Richards, the method of the present invention does not cleave oligonucleotides from extension products for future rounds of amplification. In particular, the second primer extension product formed by the extension of the first primer extension product is cleaved at the ribonucleotide base at the 5’ end of the DNA triggering template. Thus, the second primer extension product is formed by the cleavage by RNase H at a ribonucleotide base at the 5’ end of the target sequence, not the primer extension product as shown in Richards. Also, the method of the present invention includes the extension of a second DNA triggering template by the second primer extension product created by the cleavage of the first DNA triggering template. The Applicant would remind the Examiner that the two DNA triggering templates are distinct from the original DNA sequence from which the first extension product is created. Thus, the method described in Richards does not teach or suggest the use of a second DNA template sequence for the creation of primer oligonucleotides.

Because Richards does not recite the creation of an oligonucleotide primer via the cleavage by RNase H at a 5’ end of a target sequence or the extension of a second DNA triggering template by the second primer extension product created by the cleavage of the first DNA triggering template, it cannot anticipate all the elements of the claimed invention.

Combining the Richards patent with the Kurn patent and the Kacian patent cannot make up for the deficiencies of the Richards patent with respect to the claimed invention. Neither the Kurn patent or the Kacian patent teach or suggest a method for amplifying DNA by the creation of an oligonucleotide primer via the cleavage by RNase H at a 5' end of a target sequence or the extension of a second DNA triggering template by the second primer extension product created by the cleavage of the first DNA triggering template.

Lastly, the Examiner does not provide the clear, particular suggestion in the art for making the specific claimed combination of Richards, Kurn and Kacian. *Prima facie* obviousness has not been established under such conditions. The obviousness rejection is based on hindsight from these disparate references to provide random elements of the claims. There is no clear, particular motivation in the references to reach the claimed invention.

In view of the foregoing, the Applicant respectfully submits that Richards, Kurn and Kacian either alone or in combination, fail to teach or suggest the method of amplifying DNA as recited in the claims. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 3-18.

CONCLUSION

In light of the amendments and arguments presented above, Applicants respectfully submit that the claims are in condition for allowance. Early notice to this effect is solicited.

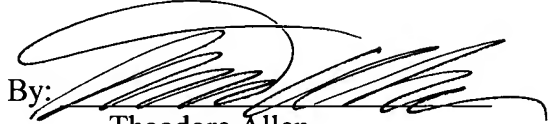
It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required

therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 502855 referencing attorney docket number 11.036011.

Customer No. 0000 38732

Respectfully submitted,

By:



Theodore Allen
Registration No. 41,578
Cytac Corporation
250 Campus Drive
Marlborough, MA 01752
Tel (508) 263-8490
Fax (508) 263-2959